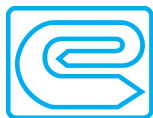


EXIM BANK: RESEARCH BRIEF

INDIAN AUTOMOTIVE INDUSTRY: AT THE CROSSROADS



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INTRODUCTION

The automotive industry is increasingly becoming the cynosure of the manufacturing sector across the globe. The industry has been evolving over the years, meeting up with challenges as diverse as transitions, consolidations and restructuring, and thereby adapting to the new market conditions. Indian automobile industry, barring downtrends in the last few years including the year 2008, was on a growth trajectory, aided by robust economic activity and infrastructure development; growth in middle-class population with disposable income, and growth in consumer demand.

The volume of production of Indian automobile industry has increased at a CAGR of over 12% during the period 2000-01 to 2007-08 with a production of over 10 million vehicles in 2007-08. The turnover of the automobile industry was estimated to be around US \$ 35 billion and that for components industry was at US \$ 18 billion in 2007-08. Export orientation of the automobile industry has also grown from a level of 3.5% in 2001-02 to over 11% in 2007-08. During the period 2001-02 to 2007-08, automobile exports from India witnessed a CAGR of over 31%, with exports of over 1.2 million vehicles in 2007-08. On the other hand, the export orientation of the Indian auto-component industry has also increased from 11% in 1997-98 to over 20% in 2007-08. The exports of autocomponents have grown at a CAGR of 24% from a level of US \$ 330 million in 1997-98 to over US \$ 3.6 billion in 2007-08. Export growth in Indian autocomponents industry was around 25% during the year 2007-08, with value of exports being US \$ 3.6 billion.

EXPORT COMPETITIVENESS OF THE INDUSTRY

An attempt has been made to analyse the export competitiveness of India in order to identify the potential markets for the Indian automotive industry in select markets / regions. The markets / regions identified for this purpose were Africa, Asia and Latin America for automobiles; and USA and Europe for auto-components. The competitiveness of Indian automotive industry in the identified markets have been analysed using competitiveness indicators, such as penetration index (share of India's exports in the region's imports of identified products), contribution index (share of India's exports of identified products in India's total exports) and specialization index (an indicator of Revealed Comparative Advantage).

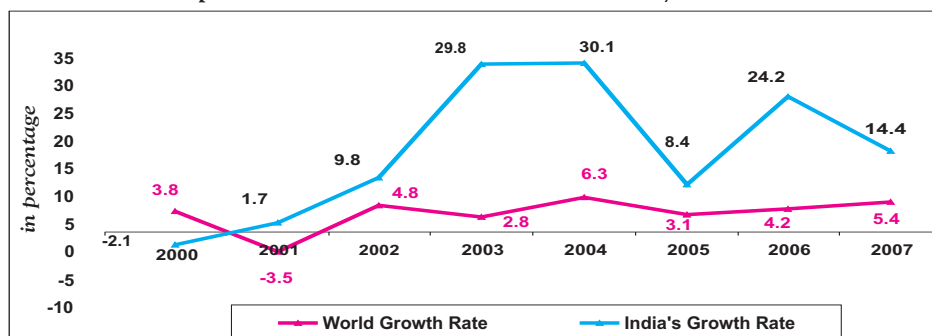
Automobiles

Analyses of international competitiveness of Indian automobile sector in Africa market reveal that the penetration index has grown over the years, between 2001 and 2006, for sub-segments such as tractors, motor cars, transport vehicles for goods, special purpose vehicles, and chassis fitted with engines. The growth in penetration

index, however, has not been much for public transport type passenger vehicles, while it has come down for motorcycles. The contribution index has also increased in these sub-categories (except the public transport type passenger vehicles, and motorcycles), indicating growing share of these categories in India's exports to Africa. The share of import of identified categories of vehicles in total import of Africa has also increased over the years indicating growing African market. As a result of these trends, the specialization index has grown for all types of vehicles, except public transport type passenger vehicles and motorcycles.

Analyses of international competitiveness of Indian automobile sector in Latin America region reveal that the penetration index has grown, between 2001 and 2006, for sub-segments such as tractors, motor cars, and motor cycles. The growth in penetration index, however, has not been much for public transport type passenger vehicles, and special purpose motor vehicles, while it has come down for motor vehicles for goods transport and chassis fitted with engines. The contribution index has also increased in the sub-categories where penetration index has grown (and vice versa), indicating growing share of these categories in India's exports to

Growth Comparison of the Indian Automobile Industry vis'-a-vis' the World



Source: OICA, EXIM Research

Latin America. The share of import of identified categories of vehicles in total imports of Latin America has also increased over the years in most of the sub-categories, indicating growing Latin American vehicles market. As a result of these trends, the specialization index has grown for all types of vehicles, except motor vehicles for transport of goods, chassis fitted with engines, and motorcycles.

India's automobile penetration in the developing Asian market has been quite modest across all the segments. This could be seen from the growing penetration index during the analysed period (years 2001 and 2006), in almost all segments. The contribution index has also grown in all vehicle segments (except motor vehicles for transport of goods, which has remained constant), indicating growing share of these vehicle segments in India's exports to developing Asia. However, the share of import of identified categories of vehicles in total import of developing Asia has declined over the analysed period, in most of the sub-categories, indicating growing manufacturing and self-sufficiency in the region. In spite of such a trend, the specialization index has grown for all types of vehicles, with some categories, such as tractors, and chassis fitted with engines, well pronounced than the others.

Auto-Components

In the USA market, the penetration index for components such as bumpers, drive axles, and non-driving axles have grown significantly indicating rise in share of India in USA's total imports. The contribution index has also increased for bumpers indicating growing share of its exports in India's total exports to USA. As a result of such trends, the specialization index has increased significantly for bumpers, drive axles, and steering wheels. While the specialization index has decreased significantly for road wheels and parts, marginal decline has been witnessed for components such as brakes and parts, non-driving axles and parts, and suspension shock absorbers.

In the European market, the penetration index has grown significantly for auto-components, such as bumpers, drive axles, suspension shock absorbers and radiators. The contribution index has also increased for bumpers and drive axles and radiators indicating growing share of its exports in India's total exports to Europe. As a result of such trends, the specialization index has

increased significantly for bumpers, drive axles, suspension shock absorbers and radiators. While the specialization index has decreased significantly for road wheels and parts, and parts and accessories of bodies, marginal increase has been witnessed for components such as brakes and parts, non-driving axles and parts, suspension shock absorbers, and steering wheels and parts.

CHALLENGES

Rising Input Costs

Prices of core inputs in the manufacture of vehicles, like steel, non-ferrous metals and rubber, have grown over the last few years, which in turn has increased the production cost of vehicles. Such cost escalation in input prices has been negatively impacting the growth of the industry.

Fuel Price Volatility

Volatility in fuel prices affects the growth of the automotive industry all over the world. The effects of increase in fuel prices are multi-pronged. Firstly, the cost of inputs in car manufacturing increases with the increase in oil prices. Secondly, the oil price increase has an impact on inflation, affecting the saving and disposable income of the consumers, thereby affecting the demand for automobiles. Thirdly, the fuel price hike would affect the overall running cost of the vehicle owners; there could also be switch in demand among the vehicle variants, as also research in use of alternative fuels.

Slowdown in Demand

Following the recent financial sector crisis, the euphoria of easier / better availability of auto finances in India has declined. The recent trends in vehicle sales and production also corroborate with this contention. The slowdown in demand for vehicles in 2008, both in domestic and export market has led to the announcement of production cuts by many vehicle manufacturers. Most of the manufacturers across various segments have undertaken mass reduction in production so as to avoid inventory pile up.

Slowdown in USA

North America has been a traditional market for the Indian auto component manufacturers with exports to the region accounting for around 27% of Indian auto component exports. The region is affected by the global financial crisis, which led to the slowdown in demand for vehicles,

especially in USA. It may be mentioned that industry wide auto sales in USA in the month of November 2008 were down nearly by 37%. With the Detroit majors like, General Motors, Ford and Chrysler seeking a bailout from the Federal Government, the auto component industry in India is feeling the brunt with slack in demand. Though the emergency bailout offer of US \$ 17.4 billion loans to the three auto majors is expected to bring some respite, the restructuring and cost cutting conditions may affect the export realization by the Indian auto components sector.

Growing Competition

Competition in India's automobile and auto-parts sector has been growing in the recent years. Earlier, the regulatory framework and market conditions positioned the Indian OEMs in monopolistic or oligopolistic market structure. As the automotive market in India is evolving through the dynamics of open market and deregulation, many new players have entered the market. In the auto-parts segment, though there are vibrant units producing high-quality products and supplying to global OEMs, the market is attracting global players who are expanding their product portfolio and enhancing their production capacities.

Changing Consumer Preferences

There has been a continuous change in consumer demand in the motor vehicle industry, making the companies to focus on innovation continuously. With growing purchasing power among Indian consumers, the demand for better and comfort vehicles with greater efficiency is also growing. Intense industry competition has led to the design of hybrid vehicles and development of new vehicle concepts. Apart from customers, new technology also allows the designers to change every aspect of car design.

Chinese Competition

Of late, low-cost imports from China threaten the business prospects of domestic auto-component manufacturers. According to Auto Component Manufacturers Association, auto-component imports from China have grown rapidly in the last few years. From less than 1.5% of share in all component imports in 2003-04, China now accounts for close to 10%. Such imports from China have set

new benchmark prices and the component manufacturers from India simultaneously tend to face challenges in the scenario of rising input prices.

Environmental Issues

The automobile sector affects the environment in multiple ways, starting from the use of materials that causes environmental degradation, and ending with the management of scrap. There are estimates that the automotive sector accounts for approximately one-fourth of global anthropogenic GHG emissions. Therefore, in order to combat the environmental challenge, firms (as well as environmentalists and national Governments) are increasingly focussing on avoidance of polluting substances in production, in addition to concentrating on fuel efficiency and emission standards.

Low R&D Orientation

The sustained competitiveness in the automotive industry comes through improvement in productivity, which calls for continuous innovation by the players. However, Indian automobile companies spend a relatively low amount on R&D; thus, their R&D orientation (R&D spending as a percentage of total sales) is low relative to the global standards.

Incidence of Levies/Duties

On vehicle sales, currently taxes are levied at multiple levels – at city level (octroi), state level (sales tax) and at the central level (excise). It is estimated that the incidence of levies and taxes on a vehicle averages to be around 30% of the cost of vehicle. The high incidence of taxes increases the cost of ownership of vehicles, thereby affecting the vehicle penetration level in India.

Infrastructure Constraints

Insufficient road infrastructure and traffic congestion could be bottlenecks in the growth of the automotive industry. Poor port connectivity is another bottleneck faced by the industry, especially when it comes towards exports. In addition to the insufficient port-handling infrastructure, there are also challenges associated with space, especially for parking and setting up of repair shops in the port yard.

Low ICT Interface

The adoption of ICT in the Indian automotive sector is at a low level as compared to the international standards. According to a study by NASSCOM, many

SME firms in the auto-component sector is facing the challenges of IT adoption, which is important for enhancing their productivity and competitiveness, and the growth of the industry.

Human Resources Challenges

One of the critical enablers for the growth in the Indian automobile industry would be adequate availability of trained manpower. It is estimated that the industry would require large numbers of trained personnel if our country has to become an auto-manufacturing hub for the world. This challenge needs to be addressed on priority basis so that the country does not lose out on critical talent that may be important for positioning India as a global automotive manufacturing hub.

STRATEGIES

Tackling the Rising Input Costs

The increase in the cost of crucial raw materials (such as steel, aluminium and rubber) that are used in manufacturing of vehicles has affected the margins of the Indian automotive sector. In order to tackle this problem of rising input costs and improve margins and price realizations, players in the automotive sector need to adopt multi-pronged strategies. These include reallocation of product mix, cost reduction through better adoption of 'lean manufacturing' solutions, and renegotiation with suppliers and vendors.

R&D on Alternate Energy Sources and Hybrid Vehicles

The share of automobiles on road, using petroleum products as fuel, has almost remained the same (at over 95%) in the past several decades. This is despite the fact that the vehicles on road have been evolving in every other aspect. In other words, product development has happened in all other aspects, except in utilization of alternate energy sources. The industry, together with the Government, may provide greater thrust on development of products that uses alternative energy sources, and R&D on hybrid vehicles.

Market Presence in All Segments

Globalization is making every player in the industry to look beyond its borders. Ironically, in spite of the increasing number of models being manufactured, the Product Life Cycle (PLC) of the vehicles are decreasing everyday, thus putting pressure on the players to find ways to diversify their

product offerings. Market presence and product offerings need not be in one category of vehicles (say passenger cars) alone; it could also be across multiple vehicle categories. Such practices show greater efficiencies in machine utilization, fewer labour hours per machine, shorter machine setup times and identification of bottlenecks and cost reduction opportunities swiftly.

Enhancing Competitiveness

Cost efficiency is necessary for Indian automobile industry to enhance its global competitiveness. Cost containment strategies may also include working with suppliers to reduce the costs in their processes, implementing low-cost designs / segments of the product, or through reduction in wastages. Strengthening the lean manufacturing practices, being adopted in India as also across the world, would also help improve competitiveness of Indian industry.

Both the automobile and the auto component industry are inter-linked and are dependent on each other for survival, and hence the hub and spoke model may be another approach for both of them to contain the cost. In the hub and spoke model, the automobile industry helps in the establishment of auto-component units around its assembly plants, and help them in technological improvement, R&D, and identification of machineries and equipments. The auto-component units may concentrate on servicing of orders, on-time supply, and cost containment in production, and thereby promote competitive pricing among the industry players.

Addressing Consumer Preferences

The dynamics of Indian automobile market is changing with the changing consumer preferences. The change in consumer preference was mainly due to fuel efficiency, as also design and technological improvement. Collaborative Product Development (CPD) is being adopted as a business strategy by global automobile majors to address the challenge of changing consumer preferences. These auto-majors work with the consumers in the development of a design and improvement in features of an existing product. Dealers also need to be roped in the design or product development process as they are the ideal gateway agencies between the customer and the firm. Synergies are to be created between the vehicle manufacturers

and dealers through better communication and understanding in order to offer not only enhanced customer services but also to understand the trends in consumer preferences.

Environmental Compliance

Environmental challenges in automobile manufacturing does not relate to emission standards alone. There are also challenges associated with end-of-life in vehicles, especially waste management. Though sufficient steps are being taken in India towards achieving international emission standards, adequate steps are still required to be taken in environmental compliance in vehicle manufacturing. Significant amount of resources are required as investment to undertake R&D programmes to address these environmental challenges.

Enhancing R&D Orientation

Indian automotive industry needs to develop a proactive culture with regard to investments in R&D rather than responsive culture. This would help the industry to understand the complexities of vehicle users and bring in product innovation through changes in design and vehicle engineering. The R&D initiatives may also stretch down to component manufacturers with active involvement of OEMs.

Infrastructure Development

In general, improvement in road infrastructure would help to enhance the demand for automobiles in India. Secondly, road infrastructure associated with last-mile port connectivity would help to enhance the supply chain management strategies of the vehicle manufacturers as well. More importantly, there is a need for building vehicle terminals in India for smoother handling of vehicle exports.

Supply Chain Management

Supply chain management in the automotive industry helps in integration of the partners to improve operational performance, materials flow and manufacturing flexibility. The process of planning, implementing and controlling cost effective flow of materials; maintenance of in-process inventory, finished goods and related information from

the point-of-production to the point-of-consumption; and efficiency in conforming to customer requirements in the Indian automotive sector needs to be improved to compete efficiently in a global market place. Implementing supply chain solutions as one more module after Enterprise Resource Planning (ERP) is not enough. There's a need for enterprise-wide process improvement. This calls for inculcating mutual respect with the vendors, dealers and consumers.

Enhancing ICT Interface

The IT sector has a major role to play in the development of Indian automotive sector to achieve its global aspirations through enhanced productivity and product efficiency. In addition, ICT interface helps the manufacturers to interact frequently with vendors and consumers also, and leverage their ideas / preferences into vehicle design. Increased IT adoption in the automotive industry not only enhances the competitiveness of the industry in the existing markets, but also creates newer markets for the Indian automotive industry.

Human Resources Development

India needs to enhance the skill-sets that are required for the industry in order to become a global automotive hub. The Government and the industry need to come together and address the challenges related to skill development and workforce shortages, both in terms of quantity and quality.

CONCLUSION

The global financial meltdown of 2008 has created a precarious condition across various sectors, which has forced countries and industries to take a fresh look at their future strategies; the automotive sector too did not remain unscathed from this turmoil. In the early part of the year 2008, the rise in crude oil prices sent shockwaves across various industries; the automotive industry was one of them to receive the brunt of the impact. The financial turmoil, in the later part of the year 2008, slowed-down the supply of credit and increased the cost of credit, both to corporates and consumers, and thereby impacted both the supply and demand for automobiles.

With the government institutions across the world infusing large amount of liquidity into the respective markets, the core issue of credit crunch may slowly be resolved. However, cost associated pressures may prevail on the margins of the global auto-majors, making them vigorously to focus on emerging markets, for sourcing components, vehicle design and marketing. It is expected that the recessionary trends in the economy and the resultant increase in margin pressures would further enhance the need for locational shift in manufacturing of automobiles. It is also expected that the volume of outsourced activities to India may further rise in the long term. Such market opportunities also provide the Indian automotive industry to acquire assets of beleaguered companies abroad with a potential for turnaround and value creation in the years to come.

It may be mentioned that the Indian automotive industry holds significant scope for expansion, both in the domestic market, where the vehicle penetration level is on the lower side and in the international market, where India could position itself as a manufacturing hub. The current level of share, viz., less than 5% of global production and less than 1% of global trade also corroborates the potential for expansion in this industry.

The contents of the publication are based on information available with Export-Import Bank of India and primary desk research through published information of various agencies. Due care has been taken to ensure that the information provided in the publication is correct. However, Export-Import Bank of India accepts no responsibility for the authenticity, accuracy or completeness of such information.

Note: Indian Rupee are referred in crore and lakhs:
1 crore : 10 million
1 lakh : 100 thousand

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